(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
31 January 2002 (31.01.2002)

PCT

(10) International Publication Number
WO 02/08309 A3

(51) International Patent Classification⁷: C08G 59/68

(21) International Application Number: PCT/EP01/07912

(22) International Filing Date: 10 July 2001 (10.07.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/620.204 17 July 2000 (17.07.2000) US

(71) Applicant *(for all designated States except US)*: **UCB S.A.** [BE/BE]; Allée de la Recherche 60, B-1070 Brussels (BE).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **NECKERS, Douglas, C.** [US/US]; 108 Secor Woods Ln., Perrysburg, OH 43551 (US). **MEJIRITSKI, Alexandre** [UA/US]; 1132 Quail Hollow Dr., Bowling Green, OH 43402 (US). **MALPERT, John** [US/US]; 300 Napoleon Rd., Bowling Green, OH 43402 (US). **WILLIAMSON, Sue, Ellen** [US/US]; 1690 Granger Court, Chamblee, GA 30341 (US).

(74) Agent: **KIRK, Martin**; Allée de la Recherche 60, B-1070 Brussels (BE).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
16 May 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 02/08309 A3

(54) Title: USE OF CROSS-LINKER AND COMPOSITIONS MADE THEREFROM

(57) Abstract: The invention provides a method of polymerizing or crosslinking cationically curable components using X-rays, gamma rays or electron beam as an energy source. As the initiator for the cationic polymerization, an onium gallate compound having an anion of the formula GaX_aR_b wherein X is a halogen atom or a hydroxy group, R is an aryl group or a substituted aryl group, a and b are each represent an integer of 0 to 4 provided that the sum of a and b is 4 is disclosed. The invention also provides a composite material and a method for preparing the composite material using an electron beam and the onium gallate compound as an initiator. Finally, disclosed is a photoresist material containing the onium gallate compound as the acid generator or crosslinking initiator.

INTERNATIONAL SEARCH REPORT

Interna al Application No
PCT/EP 01/07912

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C08G59/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C08G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	NECKERS DOUGLAS C ET AL: "Tetrakis(pentafluorophenyl)gallates (I)" TETRAHEDRON LETTERS, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 41, no. 45, November 2000 (2000-11), pages 8669-8672, XP002160995 ISSN: 0040-4039 * the whole document * ---	1-36
X,P	US 6 166 233 A (NECKERS DOUGLAS C ET AL) 26 December 2000 (2000-12-26) claims ---	1-36
E	EP 1 136 533 A (GEN ELECTRIC) 26 September 2001 (2001-09-26) page 4, line 13 - line 19; claims 4-12; examples --- -/--	1-36

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
19 March 2002	26/03/2002

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Deraedt, G

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Intern: al Application No
PCT/EP 01/07912

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
P,A	US 5 124 417 A (FAROOQ OMAR) 23 June 1992 (1992-06-23) claims; tables	1

Form PCT/ISA/210 (continuation of second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

...ormation on patent family members

Internat... Application No
PCT/EP 01/07912

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6166233 A	26-12-2000	AU 6635600 A	13-03-2001
		WO 0112720 A1	22-02-2001
EP 1136533 A	26-09-2001	EP 1136533 A1	26-09-2001
		JP 2001270990 A	02-10-2001
US 5124417 A	23-06-1992	US 5084586 A	28-01-1992
		AU 631476 B2	26-11-1992
		AU 6928691 A	15-08-1991
		CA 2034168 A1	13-08-1991
		DE 69114316 D1	14-12-1995
		EP 0442635 A1	21-08-1991
		JP 4214704 A	05-08-1992